

CLAIM AMENDMENTS

1. **(Currently Amended)** An isolated DNA molecule encoding a D-type cyclin selected from the group consisting of:
 - (a) a DNA molecule encoding a protein comprising the amino acid sequence as set forth in SEQ ID NO:2;
 - (b) a DNA molecule comprising a nucleotide sequence as set forth in SEQ ID NO:1; and
 - (c) a DNA molecule encoding an amino acid sequence which is at least 50% identical to the amino acid sequence encoded by the DNA sequence of (a) or (b) and having the amino acid motif QLLAVACLSLAAKXEET (SEQ ID NO:5), wherein X is any amino acid and wherein the motif comprises zero or up to two mismatches.
2. **(Previously presented)** A method for identifying and obtaining a cyclin or a nucleic acid molecule encoding a cyclin wherein expression of the native gene encoding said cyclin is inducible by sucrose and/or cytokinin, said method comprising performing a two-hybrid screening assay wherein a cyclin- dependent kinase is expressed as a bait and a cDNA from a cDNA library of a plant cell suspension is expressed as prey in a cell;
incubating the cell under conditions wherein the cell grows or survives when the expressed cyclin-dependent kinase binds a protein encoded by a cDNA from a cDNA library; and
selecting the growing or surviving cell and isolating the cyclin or nucleic acid molecule encoding the cyclin from the growing or surviving cell.
3. **(Previously presented)** The method of claim 2, wherein said cyclin-dependent kinase is CDC2aAt of *Arabidopsis thaliana*.

4. **(Previously presented)** An isolated DNA molecule encoding a cyclin obtained by the method of claim 2 or 3.
5. **(Canceled)**
6. **(Previously presented)** A vector comprising the DNA molecule of claim 1.
7. **(Previously presented)** The vector of claim 6 which is an expression vector wherein the DNA molecule is operably linked to one or more control sequences allowing the expression of said DNA molecule in prokaryotic and/or eukaryotic host cells.
8. **(Previously Presented)** A host cell comprising the vector of claim 6.
9. **(Canceled)**
10. **(Canceled)**
11. **(Canceled)**
12. **(Canceled)**
13. **(Canceled)**
14. **(Canceled)**
15. **(Canceled)**
16. **(Canceled)**
17. **(Canceled)**
18. **(Canceled)**
19. **(Canceled)**
20. **(Canceled)**
21. **(Canceled)**
22. **(Canceled)**
23. **(Canceled)**

24. **(Canceled)**

25. **(Canceled)**

26. **(Canceled)**

27. **(Previously presented)** A diagnostic composition comprising the DNA molecule of claim 1, wherein the DNA molecule is labeled and may therefore be detected.

28. **(Canceled)**

29. **(Canceled)**

30. **(Previously presented)** A vector comprising the DNA molecule of claim 4.

31. **(Previously presented)** The vector of claim 30 which is an expression vector wherein the DNA molecule is operably linked to one or more control sequences allowing the expression of said DNA molecule in prokaryotic and/or eukaryotic cells.

32. **(Previously presented)** A host cell comprising the vector of claim 6.

33. **(Previously presented)** A host cell comprising the vector of claim 30.

34. **(Previously presented)** A host cell comprising the DNA molecule of claim 1.

35. **(Previously presented)** A host cell comprising the DNA molecule of claim 4.

36. **(Previously presented)** The host cell of any of claims 8, 32 or 34 wherein the host cell is a bacterial, insect, fungal, plant or animal cell.

37. **(Previously presented)** A diagnostic composition comprising a DNA molecule of claim 4 and optionally suitable means for detecting said DNA molecule wherein the means for detecting is a probe.

38. **(Previously presented)** A method for promoting plant cell division, plant cell proliferation or growth which comprises increasing the level or activity of a cyclin that binds CDC2a in a plant cell wherein said cyclin comprises the sequence set forth in SEQ ID NO:2.

39. **(Currently amended)** A method for promoting plant cell division, plant cell proliferation, or growth which comprises increasing the level or activity of a cyclin that binds CDC2a in a plant cell wherein said cyclin is encoded by:

- (a) a DNA molecule encoding a protein comprising the amino acid sequence as set forth in SEQ ID NO:2,
- (b) a DNA molecule comprising a nucleotide sequence as set forth in SEQ ID NO:1,
- (c) a DNA molecule encoding an amino acid sequence which is at least 50% identical to the amino acid sequence encoded by the DNA sequence of (a) or (b) and having the amino acid sequence motif QLLAVACLSLAAKXEET (SEQ ID NO:5), wherein X is any amino acid and wherein the motif comprises zero or up to two mismatches.

40. **(Previously presented)** The method of claim 39 wherein increasing the level or activity of the cyclin that binds CDC2a is achieved by overexpressing one or more of said DNA sequences in a plant cell.

41. **(Canceled)**

42. **(Previously presented)** The isolated DNA molecule of claim 1, wherein expression of the native gene encoding the cyclin is induced by sucrose and/or cytokinin.

43. **(Canceled)**

44. **(Previously presented)** The isolated DNA molecule of claim 1 or 42 which encodes a D-type cyclin.

45. **(Previously presented)** The vector of claim 6 or 7 wherein expression of the native gene encoding the cyclin is induced by sucrose or cytokinin.

46. **(Previously presented)** The vector of claim 45 wherein the cyclin is a D-type cyclin.

47. **(Previously presented)** The method of any one of claims 2, 38, 39, 40, or 41 wherein the cyclin encodes a D-type cyclin.

48. **(Previously presented)** A method for arresting cell division or preventing re-entry into the cell cycle, said method comprising reducing the level or activity of a cyclin that binds CDC2a in a plant wherein said cyclin comprises the sequence set forth in SEQ ID NO:2.

49. **(Currently amended)** A method for arresting plant cell division or preventing re-entry into the cell cycle, said method comprising reducing the level or activity of a cyclin that binds CDC2a in a plant cell wherein said cyclin is encoded by at least one of:

- (a) a DNA molecule encoding a protein comprising the amino acid sequence as set forth in SEQ ID NO:2,
- (b) a DNA molecule comprising a nucleotide sequence as set forth in SEQ ID NO:1, or
- (c) a DNA molecule encoding an amino acid sequence which is at least 50% identical to the amino acid sequence encoded by the DNA sequence of (a) or (b) and comprising the amino acid sequence motif QLLAVACLSLAAKXEET (SEQ ID NO:5), wherein X is any amino acid and wherein the motif comprises zero or up to two mismatches.

50. **(Previously presented)** The method of claim 49 wherein reducing the level or activity of a cyclin that binds CDC2a is achieved by reducing expression of one or more DNA sequences in a plant cell.

51. **(Previously presented)** A method for the production of a cyclin encoded by a gene inducible by sucrose and/or cytokinin, said method comprising culturing a host cell of any of claims 8, 32 or 34 under conditions allowing the expression of the protein and recovering the produced protein from the culture.